

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/516,171

Attorney Docket No.: Q58064

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A channel estimation method for a digital telecommunication station, comprising the steps of:
- detecting a frequency correction burst by scanning of a wanted channel;
 - providing time and frequency synchronizations by using said frequency correction burst;
 - receiving a synchronization burst;
 - cross correlating a received training sequence contained in said synchronous burst with a selected subset of an expected training sequence to obtain a channel estimate;
 - deriving a frequency error estimate from said channel estimate;
 - correcting the frequency error of the received burst in accordance with said frequency error estimate;
 - equalizing the received synchronous burst; and
 - providing time and frequency synchronizations again by using said corrected frequency correction burst.
2. (Original) A channel estimation method according to claim 1, wherein the received training

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sequence is part of the signal within a synchronization burst transmitted by a base station of a cellular telephone network.

3. (Original) A channel estimation method according to claim 2, wherein the received training sequence is the 64 bit training sequence of the GSM system.

4. (Original) A channel estimation method according to claim 3, wherein the selected subset comprises the 21st through to the 44th symbols of the training sequence.

5. (Original) A channel estimation method according to claim 1, wherein the training sequence is an adaptive training sequence.

6. (Original) A channel estimation method according to claim 2, wherein the training sequence is an adaptive training sequence.

7. (Original) A channel estimation method according to claim 1, wherein the selected subset is an adaptive subset.

8. (Original) A channel estimation method according to claim 2, wherein the selected subset is an adaptive subset.

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9. (Original) A channel estimation method according to claim 6, wherein the selected subset is an adaptive subset.

10. (Original) A channel estimation method according to claim 1, wherein the frequency error estimate is obtained by a Doppler tracking phase locked loop.

11. (Original) A channel estimation method according to claim 2, wherein the frequency error estimate is obtained by a Doppler tracking phase locked loop.

12. (New) A channel estimation system for digital communications, comprising:

a frequency detection element for detecting a frequency correction burst in a desired channel located by scanning, said frequency detection element further detecting from the frequency correction burst selective time and frequency coordination data;

a receiver element for receiving a synchronization burst of data;

a cross-correlation element within said receiver element for correlating a training sequence contained in said synchronization burst of data with a selected subset of an expected training sequence to obtain a channel estimate;

deriving a frequency error estimate from said channel estimate by comparing said channel estimate with a prior symbol training sequence;

correcting the frequency error of the received burst in accordance with said frequency error estimate;

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equalizing the received synchronization burst; and
providing time and frequency synchronizations again by using said corrected frequency correction burst.

13. (New) A channel estimation system according to claim 12, wherein the received training sequence is part of the signal within a synchronization burst of data transmitted by a base station of a cellular telephone network.

14. (New) A channel estimation system according to claim 13, wherein the received training sequence is the 64 bit training sequence of a GSM system.

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15. (New) A channel estimation system according to claim 14, wherein the selected subset comprises the 21st through to the 44th symbols of the training sequence.

16. (New) A channel estimation system according to claim 12, wherein the training sequence is an adaptive training sequence.

17. (New) A channel estimation system according to claim 13, wherein the training sequence is an adaptive training sequence.

18. (New) A channel estimation system according to claim 12, wherein the selected subset is an adaptive subset.

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19. (New) A channel estimation system according to claim 13, wherein the selected subset is an adaptive subset.

20. (New) A channel estimation system according to claim 17, wherein the selected subset is an adaptive subset.

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21. (New) A channel estimation system according to claim 12, wherein the frequency error estimate is obtained by a Doppler tracking phase locked loop.

22. (New) A channel estimation system according to claim 13, wherein the frequency error estimate is obtained by a Doppler tracking phase locked loop.